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### CANADIAN ILLUSTRATED NEWS.

Montreal, Saturday, March 30th, 1878.

#### THE MILITARY STRENGTH OF ENGLAND.

No subject can be more interesting than this, especially in the present abnormal condition of affairs in Europe. The Secretary of War, Mr. HARDY, has announced to the House of Commons that he has one army corps ready for service abroad, and that the preparations for a second are well advanced. Lord NAHER, of Magdala, is to command an expeditionary force if one is despatched, and Sir GARNET WOLSELEY is to be the Chief of the Staff. That, with a few weeks' preparation and the expenditure of a comparatively small sum, England should be able to despatch a force of more than 60,000 men, well organized and equipped, to any point that may be selected is highly creditable to the authorities, and satisfactory to the nation. In point of arms, of guns, and of mechanical contrivances, an English army may be favourably compared with any in the world. The whole subject has been carefully reviewed by Sir GARNET WOLSELEY in last month's number of the *Nineteenth Century*, and this article, coming from the intended Chief of the Staff, may be looked on as a military manifesto. That the army is not altogether what he could wish he candidly acknowledges; he dwells on its deficiencies, in order that he may provoke the British public to make them good. But he points out the enormous difference between what England was as a military power on the eve of the Crimean war and what she is now. Then Britain sent, with the utmost difficulty, a force of twenty thousand men destitute of almost everything needed by an army, except the pluck of the men and the gallantry of officers capable of making war after a fashion that is now extinct. It is an immense advance that she can now send four times the number perfectly equipped, with adequate reinforcements ready, and under the orders of men to whom every detail of military organization after the modern fashion is thoroughly familiar. It may be well to summarize the article of SIR GARNET. He is confident that at no period of English history have they ever been so strong in a military sense as at present. In 1854 they were very weak in field artillery, and they could only show 70,000 men, while there was no reserve beyond some pensioners, who were too old for service. Were war declared to-morrow about 400,000 drilled men would fall into line if required, supported by 372 field guns, manned and horsed by the Royal Artillery. Their numbers would be made up as follows:—Standing army at home, 99,000 men; Army and Militia Reserve, 40,000; Militia, 85,000; Volunteers, 180,000; Second class Army Reserve, 10,000. In this calculation the yeomanry, 10,000 sabres, are not included, nor have the Mediterranean garrisons been counted, which would be available were the Militia to take that duty. It will thus be seen, according to a most reliable authority, that England could, with the greatest ease—and, indeed, our ministers have vouched for this—place in the field almost at once two fully-equipped army corps of more than 30,000 men each, leaving a similar

force of regular troops at home as a reserve. England, as SIR GARNET WOLSELEY has well remarked, can never engage in any great war unless it be popular with the nation; but if the warlike spirit of the people be once aroused, they are not likely to forget their ancient and glorious traditions, and HER MAJESTY will never want soldiers to fight for the honour and welfare of the Empire. In a paper which MR. FARRER, of the Board of Trade, contributes to the new number of the *Fortnightly Review*, he proves that, tried by any reasonable test, our resources for the purpose of lasting defence or attack are greater, absolutely and relatively, than they ever were. He is equally reassuring with respect to the increase in our capacity for resistance or aggression since the close of the great European wars in 1815.

It is a well-known fact that sound causes vibration in adjacent bodies. An American, Mr. EPOX, has succeeded in registering these vibrations in such a way that the original sounds can be obtained from the register. He proceeds thus. A very thin metallic disc has a sharp point fixed to one side of it, and this point impinges on a sheet of tinfoil wound on a roller with a spiral groove cut on it—the pitch on which is, by the way, the same as that of the spiral groove—it is during its rotation slowly carried along past the pointer before mentioned. Now, if we speak in front of the disc while the roller is slowly turned, the disc vibrates, and the pointer, moving with it, pricks a number of pits, which vary in closeness and size, in the tinfoil. Here, then, is a speech-register. If this perforated sheet of tinfoil on its roller is made to rotate against a similar pointer attached to a thin membrane, it stands to reason that the punctures will move the pointer, and cause the second membrane to vibrate like the first did, and in exactly the same way. Vibrating membranes—e. g. a drum-head—are well-known to produce sound; and it is a fact that Mr. EPOX has succeeded in this way in registering words and then obtain their mechanical repetition from a vibrating membrane. One need scarcely enlarge upon the extraordinary prospect which this invention opens up. As we can chemically obtain a picture of a man, so we can now mechanically obtain a report of his words. The tinfoil patterns can be copied by electrotyping, and permanent records thus obtained, and the very voice and words of men handed down with their portraits to their posterity.

LET us beware. We are getting a bad name. This is the manner in which the *Missouri Republican*, the greatest paper in the West appreciates us:—"The city of Toronto was in the hands of a howling mob all Monday night. Hotels were stoned until everything save the walls was destroyed. Hundreds of shots were fired and many persons dangerously wounded. While the police concentrated their energies upon one body of the rioters, violent demonstrations would manifest themselves in another quarter. This was kept up all night long and was occasioned by the celebration of St. Patrick's day. Such occurrences now take place quite regularly every year in Quebec, Toronto, Montreal and other Canadian cities. There is probably no section of the civilized world where intolerance and bigotry are so intensified and assume such phases of violence as in the Dominion of Canada. There seems to be no safety of life or limb in that section on the 17th of March or the 12th of July."

#### OUR ILLUSTRATIONS.

THE MAPLE SUGAR HOUSE.—The manufacture of maple sugar is an important industry in the Dominion of Canada. The sugar or rock maple is most abundant north of latitude 40° and east of the Mississippi; in the Southern States it is met with only in the mountain ranges. It is a beautiful tree, sometimes growing to the height of eighty feet, with wide-

spreading branches and thick foliage. No tree shows a more brilliant autumnal coloring. The sap of this tree contains a very large amount of sugar—a fact well known to the Indians before the settlement of this country by the whites. On many farms, in the regions where the sugar-maple is abundant, the "sugar-bush," as a grove of these trees is called, is an important part of the property. The trees are tapped in February or March, when the sap begins to ascend, by boring into the trunk near the ground. A wooden tube inserted in the boring conducts the sap into a bucket. The flow is most abundant when the days are warm with frosty nights between. In most regions the process of making the sugar is still as crude as that practiced by the aborigines. It consists of collecting the sap and boiling it down in a large chaldron over an open fire of logs built in the grove; but this method often affords most picturesque scenes at night, and the sugar camp under the trees is a favorite resort for picnic parties. When sufficiently concentrated, the syrup is poured into moulds and left to granulate. The growing importance of the industry has of late years led to more care in the process of manufacture; instead of the open camp and the log fire, the thrifty farmer has a sugar-house, with evaporators and other apparatus to facilitate the operation. At the present writing, new maple sugar is selling at 10 and 11 cents, the price of refined sugar, and if people were wise, they would buy a few pounds every week, until they had a store of fifty or sixty pounds set aside for the winter, when they could melt it into syrup, than which there is no saccharine liquor more delicious.

#### THE ELECTION OF THE NEW POPE.

The arrangements for the Conclave of Cardinals at the Vatican Palace afford the subjects of a few illustrations. They assembled, on two successive days, Tuesday and Wednesday, the 19th and 20th February, in the Sistine Chapel of the Vatican, which we have described. One of our illustrations shows the scene of the Conclave meeting in the Sistine Chapel, with the Cardinals in the act of voting. The *Times* correspondent at Rome, who was permitted to visit the Sistine Chapel and inspect the preparations on the eve of the Conclave, describes as follows what he saw:—

"I passed some of the Pope's Palatine Guard standing sentry at temporary quarters constructed for them there, and came out upon the small courtyard of the Pappagallo, from which a broad staircase gives access to the Sala Regia on the opposite side to that opening from Bernini's Royal Scala, now walled up. From the landing at the summit of this staircase, projecting into the Sala Regia, was a semicircular construction, form of uprights and cross-bars of wood, like a gigantic bridge, with a door of the same formation. Here it was that Ambassadors or other desiring to confer with any of the Cardinals or Conclavists would be permitted to talk to them through the bars; the door being opened only to admit any Cardinals arriving after the Conclave had commenced, or, with the consent of their brethren, leaving on account of ill health. But the door was still open, the Cardinals had not yet entered, and I made my way across the Sala Regia into what I was only able to recognize as the Sistine Chapel by the upper part of Michael Angelo's 'Last Judgment' and other frescoes. But for these I should have thought I was standing in a council-chamber of the fifteenth century, such as one sees there represented in old pictures, so entirely had it been transformed.

"There are few who do not know the shape of the Sistine Chapel. At now appeared a long room, its walls to a considerable height draped with dark violet baize, stretched tight, projecting from them at the height of about 10 feet a continuous series of square canopies, in close succession, across the entrance end opposite to the altar and along the sides till they touched the wall. The canopies were flat on the top, with plain valances about 5 in. in depth, bordered with braid and fringe. They projected outward about 2 ft. 6 in., and were the same in width, with an interval of 6 in. between them. From the corners of each canopy against the wall descended perpendicular lines of violet silk braid of a shade lighter than the baize, defining the space allotted to each Cardinal. Below these canopies ran a continuous bench, and in front of the bench a continuous series of sixty-four small tables, corresponding exactly to the canopies. These tables were draped down to the ground, so that the legs were not visible; the covering of the tables, the canopies, and the bench was of the same material and colour as that on the wall behind them, except that the first table and canopy at the end against the altar wall on the Gospel side, and the seventh, eighth, and ninth from it on the same side, with so much of the bench and wall as belonged to each, were covered and draped with green. These were the seats of Amat, the senior Cardinal-Bishop, and of Schwarzenberg, Asquini, and Carafa, the three senior Cardinal Priests, who, being Cardinals appointed by Gregory XVI., were not in mourning. At the back, rising above each canopy, were pointed uprights with little wheels on the top, through which cords were passed from the front of the canopies and carried behind, in order that all these canopies except one might be abased the moment the Head of the Church was elected, the canopy on his stall only remaining elevated. On each of the little tables stood a little inkstand, sandbox, candlestick, and penholder of

silver; a square pad of black velvet on four little feet, which was a pen-wiper, and the other requisites for signing and sealing the voting-papers. In the middle of the room stood a large table, about 14 ft. square, for the use of the scrutineers, and in the open space around it eight other tables, measuring about 4 ft. by 3 ft., where those Cardinals who were afraid of being overlooked by their neighbours could fill in their 'schede' unobserved. These tables were also covered and draped with violet; but the floor was carpeted with green baize, and the ascent to the altar was covered by a carpet of geometric design like 'opus Alexandrinum' worked in various colours. By the side of the altar stood the 'Sedia Gestatoria,' which was that used by Pius VII.

"The door by which one enters the Sistine Chapel from the Sala Regia does not open at once upon this Council Chamber. All that first third of the area of the Chapel, where the Royal tribune and the benches for the Diplomatic Corps are on the left and those for ladies on the right, remained as it was, except that a square space on the left in front of the Royal tribune had been partitioned off with tapestry, and handsomely carpeted, to serve as the Sacristy where the newly-elected Pope was to be invested for the first time with the Pontifical robes. From this portion of the Chapel, to which the ladies are admitted on ordinary occasions, nothing could be seen of the Council Chamber beyond. It was effectually hidden by the back of the violet screen forming the wall of the Chamber behind the Cardinals' seats, and carried across where the light middle palast supported a cornice above constituted an open screen. Putting aside a curtain by which a small doorway in the middle of the screen opened, I stood within the violet chamber, the bench, with the little tables in front and canopies above, extending to my right and left, and then at right angles along the sides as far as the altar went. To the right of the doorway, and in line with it, were the places for Cardinals Giambellini, De Lorenzini, M. Chesky, and Manning; to the left those of Anton-Martin, Smeor, Martignelli, and Oregano. Manning occupying the right and Oregano the left corner looking towards the altar. The places for the remaining fifty-six Cardinals were ranged along the sides facing each other, commencing with Cardinal Deschamps, then Simonini, on the right of Manning, and Cardinal Gurbert, and then Franconi, on the left of Oregano. Cardinal Howard's place was near the middle on the right side, with those of the Spaniards, Garcia Gil and Pavaez Rio, on each side of him; and almost immediately opposite was Cardinal Cullen's place, between those of Holy-Night and Bonner-chese. To the right of Holy-Night sat Bonaparte. The end seat on the left—that is to say, on the Gospel side of the altar—was that of Cardinal Amat, Dean of the Order of Cardinal Bishops; opposite to him, at the end on the Epistle side, was that of Cardinal Caterini, Dean of the Order of Cardinal Deacons, who announced the election of Leo XIII. to the people. The place where Cardinal Pavaez Rio when the choice was to fall—sat was the seventh on the left side, counting from the altar wall, and separated between the seats of Duquet and Antonper. I observed that there were no traces of the dais raised by five or six steps upon which the pontifical throne used to stand; and then I remembered that on entering from the Sala Regia I had walked up a distinctly inclined plane. The floor had been raised to remove all sign of individual superiority as long as it was equally enjoyed by the sixty-four Cardinals. The 'Sedia Gestatoria' standing on the ground by the end of the altar was merely a handsome chair, only to become a throne when raised into the 'prothronus' in front of the altar for the elect to take his seat, while sixty-three canopies sank down flat to the wall.

"Above the high altar a large forestry picture representing the Descent of the Holy Ghost had been placed; and outside the chamber, in the left corner of the Sistine Chapel on entering from the Sala Regia, stood the stove where the voting-papers were to be burnt. It was a movable fireplace elevated on four iron legs a yard in height, and having a descending shutter-like front, to be drawn down as soon as the papers had been placed on a small bundle of damp straw and the whole set on fire. "Returning into the Sala Regia, I found the Palatine Guard had formed along it to indicate the line by which the Cardinals, singing the *Veni Creator Spiritus*, were to pass processionally into Conclave. Three or four of their Eminencies had already entered. No outsider was entitled to remain longer within the inner precincts. I descended the stairs to the courtyard of the Pappagallo to see the members of the College arrive; and as I went down the staircase I met Cardinal de Falloux, and, immediately after him, Cardinal Manning, ascending. It was a very interesting sight. Each Cardinal came accompanied by his Conclavists, who were to be shut up with him, and attended by servants carrying carpet bags, bundles of rugs, strapped up, and other belongings, exactly as if they were arriving at the entrance of a railway station to go off by some special ecclesiastical train. One Cardinal, in addition to his bags and rugs, had a foot-bath, another a couple of very comfortable-looking cushions. At the foot of the stairs a few privileged persons, among whom I recognised Prince Barberini, Prince Massimo, General and Madame Kanzler, and two English ladies, were standing to bid good-by to the Cardinals of their acquaintance. One was tempted to note the different aspects of the Cardinals as they came along the little court-